

Name: _____ Pd: _____ Date: _____


ANSWER KEY

Chapter 1 - REVIEW

Graph on a number line and put in interval notation

1) $-3x + 4 < -2$

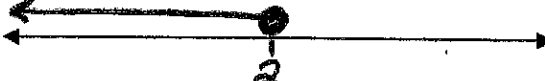
$$\begin{array}{r} -4 \quad -4 \\ \hline -3x < -6 \\ \hline -3 \quad -3 \\ \hline x > 2 \end{array}$$



IN: $(2, \infty)$

2) $5(2x - 6) \leq -10$

$$\begin{array}{r} 10x - 30 \leq -10 \\ 10x \leq 20 \\ x \leq 2 \end{array}$$



IN: $(-\infty, 2]$

- 3) Write the equation of the line given the slope = -3 going through point (-2, -5). Circle your answer.

$$\begin{array}{l} y + 5 = -3(x + 2) \\ y + 5 = -3x - 6 \\ \boxed{y = -3x - 11} \end{array}$$

- 4) Write the equation of the line given the slope = 1/5 going through point (-3, 0). Circle your answer.

$$\begin{array}{l} y - 0 = \frac{1}{5}(x + 3) \\ \boxed{y = \frac{1}{5}x + \frac{3}{5}} \end{array}$$

Write the equation of the line given the following points: Circle your answer.

- 5.) (2, 3) and (4, 1)

$$\frac{1-3}{4-2} = \frac{-2}{2} = -1$$

$$\begin{array}{l} y - 1 = -1(x - 4) \\ y - 1 = -x + 4 \\ \boxed{y = -x + 5} \end{array}$$

- 6.) (-4, 0) and (3, -2)

$$\frac{-2-0}{3+4} = -\frac{2}{7}$$

$$\begin{array}{l} y - 0 = -\frac{2}{7}(x + 4) \\ \boxed{y = -\frac{2}{7}x - \frac{8}{7}} \end{array}$$

7) Write the equation of the line parallel to $4y = 3x + 12$ going through the point $(4, 2)$.

Circle your answer.

$$\frac{4y}{4} = \frac{3x+12}{4} \quad m = \frac{3}{4}$$

$$y = \frac{3}{4}x + 3$$

$$y - 2 = \frac{3}{4}(x - 4)$$

$$y - 2 = \frac{3}{4}x - 3$$

$$y = \frac{3}{4}x - 1$$

8) Write the equation of the line parallel to $-2x + 7y = -14$ going through the point

$(14, -10)$. Circle your answer.

$$-2x + 7y = -14 \quad m = \frac{2}{7}$$

$$7y = 2x - 14$$

$$y = \frac{2}{7}x - 2$$

$$y + 10 = \frac{2}{7}(x - 14)$$

$$y + 10 = \frac{2}{7}x - 4$$

$$y = \frac{2}{7}x - 14$$

9) Write the equation of the line perpendicular to $2y = 3x - 10$ going through the point

$(-6, 1)$. Circle your answer.

$$2y = 3x - 10 \quad m = -\frac{2}{3}$$

$$y = -\frac{2}{3}x - 5$$

$$y - 1 = -\frac{2}{3}(x + 6)$$

$$y - 1 = -\frac{2}{3}x - 4$$

$$y = -\frac{2}{3}x - 3$$

10) Write the equation of the line perpendicular to $-3x - 6y = -6$ going through the point

$(-5, 0)$. Circle your answer.

$$-3x - 6y = -6 \quad m = 2$$

$$-6y = 3x - 6$$

$$y = -\frac{1}{2}x + 1$$

$$y - 0 = 2(x + 5)$$

$$y = 2x + 10$$

Solve the following equation for the indicated variable. Circle your answer.

11) $y - y_1 = m(x - x_1)$: solve for x

$$\frac{y - y_1}{m} + x_1 = x$$

$$\frac{y - y_1}{m} = \cancel{m}(x - x_1)$$

$$\frac{y - y_1}{m} = x - x_1 + x_1$$

12) $A = \frac{1}{2}h(b_1 + b_2)$; solve for h

(2) $A = \frac{1}{2}h(b_1 + b_2)$

$$2A = h(b_1 + b_2)$$

$$\frac{2A}{(b_1 + b_2)} = h$$

$$\frac{2A}{b_1 + b_2} = h$$

Solve inequality. Determine if the answer is *sometimes*, *always*, or *never*. Circle your answer.

13) $2x + 3(x + 2) - 4x \geq -2x + 3(x + 4)$

$$2x + 3x + 6 - 4x \geq -2x + 3x + 12$$

$$\begin{array}{r} x + 6 \geq x + 12 \\ -x \quad -x \\ \hline 6 \geq 12 \end{array}$$

NEVER

14) $-6(x + 3) \geq 18$

$$-6x - 18 \geq 18$$

$$\begin{array}{r} -6x \geq 36 \\ \frac{-6}{-6} \quad \frac{36}{-6} \\ \hline x \leq -6 \end{array}$$

SOMETIMES

15) $2(2x - 1) - x \leq 3(x + 3)$

$$4x - 2 - x \leq 3x + 9$$

$$\begin{array}{r} 3x - 2 \leq 3x + 9 \\ -3x \quad -3x \\ \hline -2 \leq 9 \end{array}$$

ALWAYS

16) Determine if the table represents a linear function? If so, write the equation of the line.
Circle your answer.

x	y
4	6
7	12
10	18
13	24

$$m = \frac{6}{3} = 2$$

$$y - 6 = 2(x - 4)$$

$$y - 6 = 2x - 8$$

$$y = 2x - 2$$

17) Determine if the table represents a linear function? If so, write the equation of the line.
Circle your answer.

x	y
-3	4
0	8
3	12
6	16

$$m = \frac{4}{3}$$

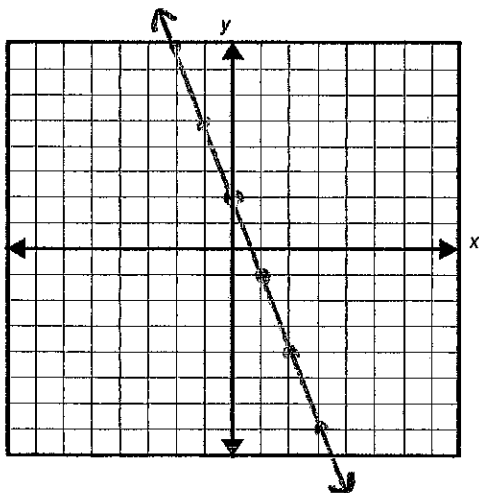
$$y - 8 = \frac{4}{3}(x - 0)$$

$$y - 8 = \frac{4}{3}x$$

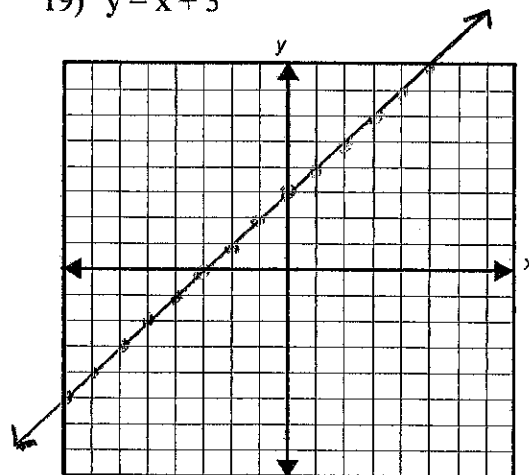
$$y = \frac{4}{3}x + 8$$

Graph the line of the following:

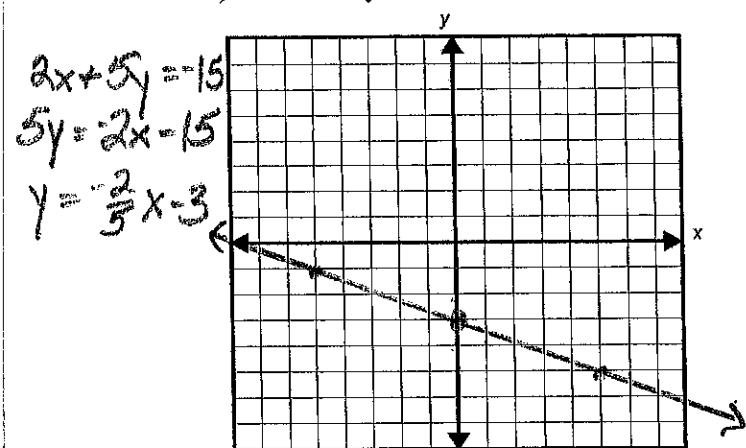
18) $y = -3x + 2$



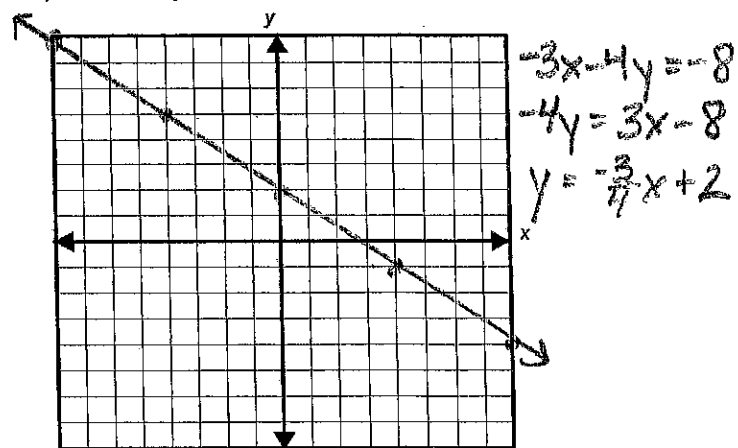
19) $y = x + 3$



20) $2x + 5y = -15$

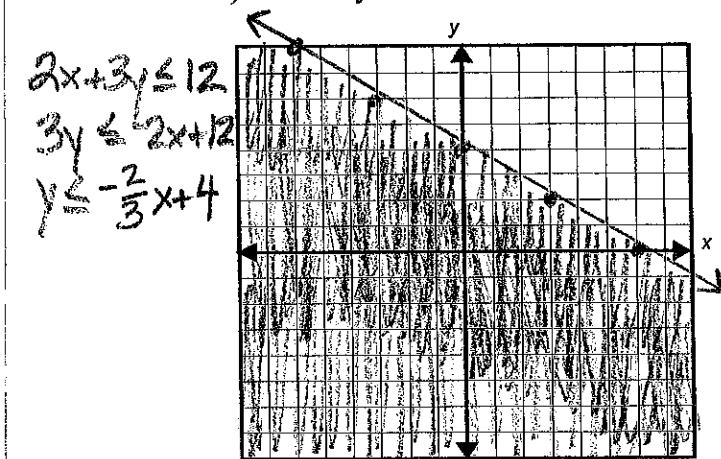


21) $-3x - 4y = -8$

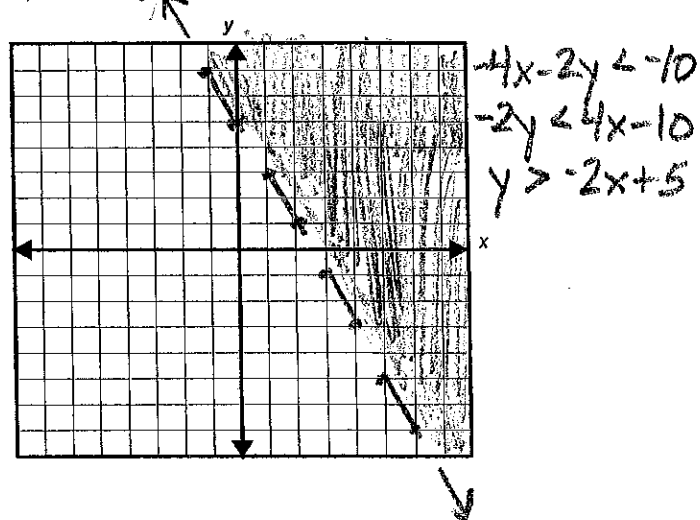


Graph the following inequalities:

22) $2x + 3y \leq 12$

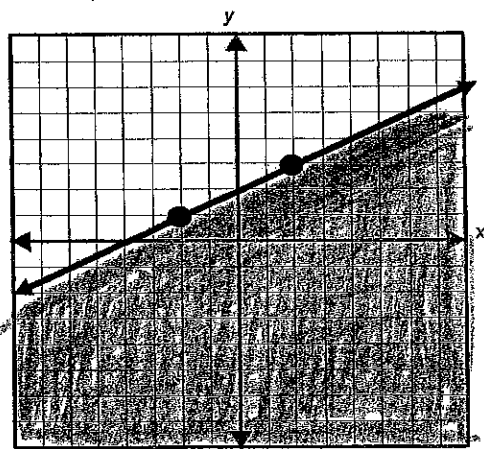


23) $-4x - 2y \leq -10$

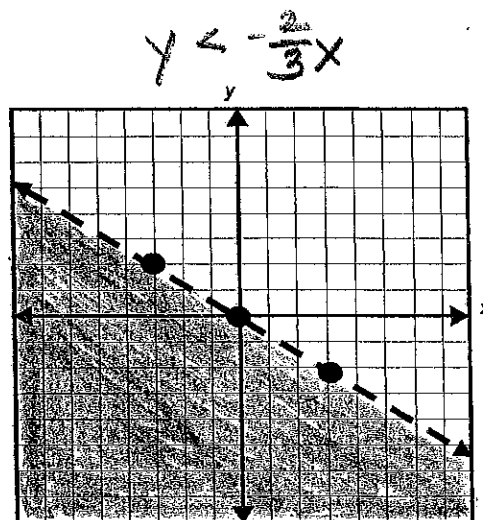


Write the equation of the following inequality

24) $y \geq \frac{1}{2}x + 2$



25) $y < -\frac{2}{3}x$



Determine the value of the following given the function:

26) $f(x) = 4x + 8$

$f(2)$

$4(2) + 8$
 (16)

$f(-1)$

$4(-1) + 8$
 (4)

$f\left(\frac{7}{4}\right)$

$4\left(\frac{7}{4}\right) + 8$
 (15)

27) $f(x) = -3x^2 + 2x - 5$

$f(0)$

$-3(0)^2 + 2(0) - 5 = (-5)$

$f(3)$

$-3(3)^2 + 2(3) - 5$
 $-27 + 6 - 5 = (-26)$

$f(-8)$

$-3(-8)^2 + 2(-8) - 5$
 $-192 - 16 - 5 = (-213)$

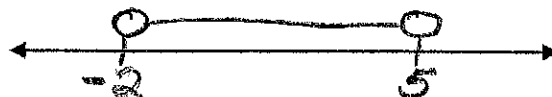
28) AND/OR statements: graph on a number line and write final answer in interval notation

$3x \geq 18$ or $-9x \geq 18$
 $x \geq 6$ $x \leq -2$



IN: $(-\infty, -2] \cup [6, \infty)$

$2x < 10$ and $2x > -4$
 $x < 5$ $x > -2$



IN: $(-2, 5)$

Word Problems:

29) You have a summer job at a car wash. You earn \$8.50 per hour and are expected to pay a one-time fee of \$15 for the uniform. If you work x hours per week, how much will you make during the first week? Write the algebraic expression.

$8.50x - 15 = m$

30)) In football, a touchdown (t) is worth 6 points, an extra-point kick (k) is worth 1 point, and a field goal (f) is worth 3 points.

- a) What algebraic expression models the total number of points that a football team scores in a game, assuming each scoring play is one of the three given types?

$$6t + 1k + 3f$$

- b) Suppose a football team scores 3 touchdowns, 2 extra-point kicks and 4 field goals. How many points did the football team score?

$$6(3) + 1(2) + 3(4) \\ 18 + 2 + 12 = 32 \text{ points}$$

31) The cost of a field trip is \$1,350 plus \$8 per student. If the school can spend at most \$2,600, how many students can go on the field trip?

$$1350 + 8x \leq 2600 \\ 8x \leq 1250 \\ x \leq 156.25$$

The most number of students that can attend the trip are 156.

32) A club offers two membership plans. You can pay \$75 per month and go as often as you like or you can pay \$25 per month plus \$4 per visit. How many times must you visit the club for the second membership to cost more than the first?

$$75 < 25 + 4x \\ 50 < 4x \\ 12.5 < x$$

You must visit the club 13 times for the second membership to cost more than the first.

